General

Guideline Title

Management of penetrating extraperitoneal rectal injuries: an Eastern Association for the Surgery of Trauma practice management guideline.

Bibliographic Source(s)

Bosarge PL, Como JJ, Fox N, Falck-Ytter Y, Haut ER, Dorion HA, Patel NJ, Rushing A, Raff LA, McDonald AA, Robinson BR, McGwin G Jr, Gonzalez RP. Management of penetrating extraperitoneal rectal injuries: an Eastern Association for the Surgery of Trauma practice management guideline. J Trauma Acute Care Surg. 2016 Mar;80(3):546-51. [19 references] PubMed

Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

Recommendations

Major Recommendations

The strength of recommendation (strong or weak/conditional) and levels of evidence (high, moderate, low or very low) are defined at the end of the "Major Recommendations" field.

Population, Intervention, Comparator, and Outcome (PICO) Question 1

In patients with nondestructive penetrating extraperitoneal injuries (P), should proximal diversion (I) be performed versus primary repair (if feasible) without proximal diversion (C) to decrease the incidence of infectious complications (O) (see Table 2 in the original guideline document)?

Recommendation

Despite the overall quality of evidence being very low, the panel considered that most patients would place a high value on avoidance of mortality and infectious complications. All of these factors resulted in the formulation of a conditional recommendation by the committee. The committee concludes that the desirable effects of adherence to a recommendation probably outweigh the undesirable effects. Thus, in patients with nondestructive penetrating extraperitoneal rectal injuries, the committee conditionally recommends proximal diversion (vs. nondiversion).

PICO Question 2

In patients with nondestructive penetrating extraperitoneal rectal injuries (P), should presacral drainage (I) versus no presacral drainage (C) be performed to decrease incidence of infectious complications (O) (see Table 3 in the original guideline document)?

Recommendation

In patients with nondestructive extraperitoneal rectal injuries, the committee conditionally recommends against the routine use of presacral drains.

PICO Question 3

In patients with nondestructive penetrating extraperitoneal rectal injuries (P), should distal rectal washout be performed (I) versus no distal rectal washout (C) to decrease the incidence of infectious complications (O) (see Table 4 in the original guideline document)?

Recommendation

In patients with nondestructive penetrating extraperitoneal rectal injuries, the committee conditionally recommends not performing distal rectal washout (vs. performance of distal rectal washout).

Definitions

GRADE Methodology Levels for Rating the Quality of Evidence

Quality Level	Definitions
High	Very confident that the true effect lies close to estimate of effect.
Moderate	Moderate effect; true effect is likely close to estimate of effect but may be substantially different.
Low	Limited confidence; true effect may be substantially different from estimate of effect.
Very Low	Little confidence; true effect likely substantially different from estimate of effect.

GRADE Definition of Strong and Weak Recommendation

	Strong Recommendation	Weak/Conditional Recommendation
For patients	Most patients would want the recommended course of action.	Most patients would want the recommended course of action, but many would not.
For clinicians	Most patients should receive the recommended course of action.	Different choices will exist for different patients, and clinicians should help patients decide.
For policy makers	Recommended course should be adopted as policy.	Considerable debate and stakeholder involvement needed to make policy.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Nondestructive penetrating extraperitoneal rectal injuries

Guideline Category

Evaluation

Treatment

Clinical Specialty

Colon and Rectal Surgery

Emergency Medicine

Gastroenterology

Intended Users

Physicians

Guideline Objective(s)

To evaluate the use of diversion, distal rectal washout (DRW), and presacral drainage (PD) in nondestructive penetrating extraperitoneal rectal injuries

Target Population

Patients with nondestructive penetrating extraperitoneal rectal injuries

Interventions and Practices Considered

1. Proximal diversion
2. Presacral drainage (not recommended routinely)
3. Distal rectal washout (not recommended)

Major Outcomes Considered

- Mortality
- Infectious complications (sepsis and intra-abdominal infection)

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Identification of References

With the assistance of a professional medical librarian, a search of the National Library of Medicine and the National Institutes of Health MEDLINE database was conducted using PubMed and IndexCat, as well as proprietary indices hosted by Elsevier (Scopus) and EBSCO (CINAHL) with citations published between January 1900 and July 2014. The committee used the "related articles" function to broaden the search and scan all citations for relevance. In addition to the electronic search, they manually searched the bibliographies of recent reviews and articles. Articles were limited to those in the English language involving human subjects. A systematic review of the available databases using PubMed, IndexCat, Scopus, and CINAHL was performed with the following search terms: *rectum*, *rectal*, *anorectal*, *trauma*, *wound*, *injury*, *penetrating*, *firearm*, *gunshot*, *stab*, *impale*, and *human*. Letters to the editor, single-case reports, book chapters, and review articles were

excluded. Articles that focused specifically on injuries related to combat were excluded. In addition, pediatric literature was included in the search; however, none of the data addressed the Population, Intervention, Comparator, and Outcome (PICO) questions. Of the 306 articles identified, 250 were eliminated for not relating to the PICO questions or not meeting inclusion criteria. The remaining 56 articles were each reviewed by two committee members to determine eligibility in this review. This resulted in 18 articles meeting inclusion criteria and addressing the PICO questions that had been formulated to create these guidelines (see Figure 1 in the original guideline document for a study selection flow diagram).

Number of Source Documents

- Population, Intervention, Comparator, and Outcome (PICO) Question 1: Fourteen articles were identified which addressed PICO Question 1.
- PICO Question 2: Seventeen articles were reviewed by the committee from which data were extracted to address PICO Question 2.
- PICO Question 3: Thirteen articles were available to address PICO Question 3.

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Grading of Recommendations Assessment, Development and Evaluation (GRADE) Methodology Levels for Rating the Quality of Evidence

Quality Level	Definitions
High	Very confident that the true effect lies close to estimate of effect.
Moderate	Moderate effect; true effect is likely close to estimate of effect but may be substantially different.
Low	Limited confidence; true effect may be substantially different from estimate of effect.
Very Low	Little confidence; true effect likely substantially different from estimate of effect.

Methods Used to Analyze the Evidence

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Data Extraction and Methodology

Following identification of the potentially pertinent 56 articles, each article was assigned to two committee members for extraction of data for each Population, Intervention, Comparator, and Outcome (PICO) in question. Because of the small numbers reported as well as heterogeneity and variability in reporting of data among the articles, meta-analysis was not practical for this guideline. Of the articles that were identified, only two were prospective, one observational and one randomized.

PICO Question 1

Data reported for mortality and infectious complications were pooled to determine overall rates. Intrinsic limitations of the data existed because of heterogeneity, nonstandardized study designs, and incomplete reporting of complications. In addition, several studies did not delineate between intraperitoneal and extraperitoneal injuries.

PICO Question 2

Similarly to PICO Question 1, data reported for the outcomes of mortality and infectious complications were pooled to determine overall rates. The same limitations seen with PICO Question 1 existed.

PICO Question 3

The data obtained for the outcomes of mortality and infectious complications were pooled to determine overall rates. This data set was limited similarly to the data for PICO Questions 1 and 2.

Grading the Evidence

PICO Question 1

The overwhelming majority of data related to this PICO question was retrospective and observational in nature. With the use of the Grading of Recommendations Assessment, Development and Evaluation (GRADE) framework for evaluating the data related to the outcomes of mortality and infectious complications, the quality of the data for this specific PICO question suffers because of risk of bias and imprecision. Bias was assigned because of the majority of the studies use historical controls. Imprecision was determined because of the very low numbers of events seen within the comparator group. Because of these factors, the overall quality of evidence has been determined to be very low.

PICO Question 2

With the use of the GRADE framework for evaluating the data related to the outcomes of mortality and infectious complications, one randomized prospective study was specific to this PICO question, which represented approximately 7% of the total pooled data, with the remainder of the data being retrospective and observational in nature. No serious inconsistency was detected; however, serious concerns for risk of bias and imprecision were noted among the representative studies. The inconsistency in study design and data reporting lowered the grade for this PICO. Therefore, the overall quality of evidence was considered very low by the committee.

PICO Question 3

With the use of the GRADE framework for evaluating the data related to the outcomes of mortality and infectious complications, there was only one prospective observational study for this PICO, and this article included small numbers of participants (14 patients) that were not managed with distal rectal washout (DRW), without a comparator group. The overwhelming data related to this PICO question were retrospective and observational in nature. No serious risk of bias was detected; however, inconsistency among the studies in design and data reporting lowered the grade for this PICO question. Therefore, the overall quality of evidence was considered very low by the committee.

Qualitative Synthesis and Quantitative Synthesis (Meta-Analysis)

Please refer to the original guideline document for details of the qualitative synthesis and quantitative synthesis (meta-analysis) performed for each PICO question.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

The Population (P), Intervention (I), Comparator (C) and Outcome (O) questions were defined as follows:

PICO Question 1

In patients with nondestructive penetrating extraperitoneal rectal injuries (P), should proximal diversion (I) be performed versus no proximal diversion with primary repair (if feasible) (C) to decrease the incidence of complications (O)?

PICO Question 2

In patients with nondestructive penetrating extraperitoneal rectal injuries (P), should presacral drainage (I) versus no presacral drainage (C) be performed to decrease the incidence of complications (O)?

PICO Question 3

In patients with nondestructive penetrating extraperitoneal rectal injuries (P), should distal rectal washout be performed (I) versus no distal rectal washout (C) to decrease the incidence of complications (O)?

Rating Scheme for the Strength of the Recommendations

Grading of Recommendations Assessment, Development and Evaluation (GRADE) Definition of Strong and Weak Recommendation

	Strong Recommendation	Weak/Conditional Recommendation
For patients	Most patients would want the recommended course of action.	Most patients would want the recommended course of action, but many would not.
For clinicians	Most patients should receive the recommended course of action.	Different choices will exist for different patients, and clinicians should help patients decide.
For policy makers	Recommended course should be adopted as policy.	Considerable debate and stakeholder involvement needed to make policy.

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

The Eastern Association for the Surgery of Trauma (EAST) Practice Management Guidelines Section provided detail-oriented peer review of this article.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Overall, in the literature, the diversion group had nearly a 50% reduction (diversion, 8.8% vs. nondiversion, 18.2%) of overall infectious complications.

Potential Harms

Overall, in the literature, there is no reported mortality in the nondiversion group (0 of 26), while the diversion group has a mortality rate of 1.7% (9 of 523). Unfortunately, it is unclear as to whether death in these patients was specifically related to the complications of the rectal injury or is related to overall trauma burden to include hemorrhagic shock.

Qualifying Statements

Qualifying Statements

- The Eastern Association for the Surgery of Trauma (EAST) is a multi-disciplinary professional society committed to improving the care of injured patients. The Ad hoc Committee for Practice Management Guideline Development of EAST develops and disseminates evidence-based information to increase the scientific knowledge needed to enhance patient and clinical decision-making, improve health care quality, and promote efficiency in the organization of public and private systems of health care delivery. Unless specifically stated otherwise, the opinions expressed and statements made in this publication reflect the authors' personal observations and do not imply endorsement by nor official policy of EAST.
- "Clinical practice guidelines are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances."* These guidelines are not fixed protocols that must be followed, but are intended for health care professionals and providers to consider. While they identify and describe generally recommended courses of intervention, they are not presented as a substitute for the advice of a physician or other knowledgeable health care professional or provider. Individual patients may require different treatments from those specified in a given guideline. Guidelines are not entirely inclusive or exclusive of all methods of reasonable care that can obtain/produce the same results. While guidelines can be written that take into account variations in clinical settings, resources, or common patient characteristics, they cannot address the unique needs of each patient nor the combination of resources available to a particular community or health care professional or provider. Deviations from clinical practice guidelines may be justified by individual circumstances. Thus, guidelines must be applied based on individual patient needs using professional judgment.
- The recommendations are meant to inform the decision-making process and not replace clinical judgment as individual patient circumstances/ conditions may dictate variation to the suggested recommendations. The data regarding mortality related to each Population, Intervention, Comparator, and Outcome (PICO) question are questionable to the committee because the raw reporting of mortality was overwhelmingly unaccompanied by explanation of the cause of death.

*Institute of Medicine. Clinical practice guidelines: directions for a new program. MJ Field and KN Lohr (eds) Washington (DC): National Academy Press; 1990. pg 39.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2016 Mar

Guideline Developer(s)

Eastern Association for the Surgery of Trauma - Professional Association

Source(s) of Funding

Eastern Association for the Surgery of Trauma (EAST)

Guideline Committee

Eastern Association for the Surgery of Trauma (EAST) Practice Management Guidelines Section

Composition of Group That Authored the Guideline

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Financial Disclosures/Conflicts of Interest

The authors declare no conflicts of interest.

Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

Guideline Availability

Available from the Journal of Trauma and Acute Care Surgery Web site .

Availability of Companion Documents

The following is available:

- Kerwin AJ, Haut ER, Burns JB, Como JJ, Haider A, Stassen N, Dahm P, Eastern Association for the Surgery of Trauma Practice Management Guidelines Ad Hoc Committee. The Eastern Association of the Surgery of Trauma approach to practice management guideline development using Grading of Recommendations Assessment, Development, and Evaluation (GRADE) methodology. J Trauma Acute Care Surg. 2012 Nov;73(5 Suppl 4):S283-7. Available from the Eastern Association for the Surgery of Trauma (EAST) Web site .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on November 22, 2016. The information was not verified by the guideline developer.

Copyright Statement

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